

More thorough search will undoubtedly bring to light, perhaps additional species, and many interesting forms, especially among the mountainous districts of Warren and Saratoga counties, where the flora has received but very little attention and study.

### Ophioglossaceae

#### OPHIOGLOSSUM VULGATUM L.

Dry pastures, rarely in swales, bogs and woods; infrequent. June–August.

Glens Falls (Mrs. L. A. Millington) in correspondence with Mr. Wm. H. Leggett, June 19, 1872, says: "*Ophioglossum vulgatum*, I find in nearly every swampy bit of grass"; Assembly Point, Lake George (G. D. Hulst); Hague (Mrs. E. Watrous); Comstocks (J. F. Kemp); Granville, "rather common" (F. T. Pember); Baker farm near Schuylerville (Wallace Greenalch); New Michigan Pond marsh, W. Fort Ann, Nov. 3, 1900, two small sterile plants growing in sphagnum; southeast of Tripoli; Vaughns; bog north of Round Lake; low meadow south of Shushan near the Fly Kill.

This fern prefers to grow about little knolls of stony sandy and silt loam at Vaughns; and is usually overlooked on account of its small size. It varies from a few inches to a foot in height and has from one to three fruiting plants from the same rootstock, more than one when the plants are somewhat gregarious. Dry successive seasons tend to kill it out. It grows quite luxuriantly, between the tussocks of a swale of *Carex stricta*, about a mile east of Vaughns corners, on the north bank of South Beaver creek.

#### BOTRYCHIUM SIMPLEX E. Hitchcock

Dry woods; very rare.

Woods of sugar maple and hemlock, about half a mile west of Vaughns schoolhouse, June 23 and July 12, 1896 (a portion of the sterile frond fruiting in one or

two specimens); June 10, 1897 (unrolling); July 11, 1899. Palmertown mountains, east of Brayton, Lake George, top of the ridge, June 16, 1897; a single plant with the sterile segment 9-lobed and long petioled. Sugar maple woods east of Tripoli schoolhouse, July 13, 1897.

Probably often overlooked because of its small size. The specimens have been verified by Miss Margaret Slosson.

#### BOTRYCHIUM NEGLECTUM Wood

Mixed woods of hemlock and hardwoods; and moist ravine beds in mountain woods; scarce. May 25–July 25.

Burnt Hill, Assembly Point (Hulst); Whitehall (C. H. Peck); Mt. Hope, Putnam mountains; the falls in West Brook and near Three Ponds, W. Fort Ann; Vaughns, sometimes under the deep shade of small hemlocks; north of Round Lake.

The glaucous plants vary from a few inches to a foot in height. The larger plants are quite fleshy; the sterile segment is divided into 7–11 divisions; the fertile, 2–3 pinnate and much branched.

#### BOTRYCHIUM OBLIQUUM Muhl.

Dry woodlands and pastures; frequent. Aug.–Nov. Lake George (C. H. Hall); Fishbrook Pond, Lake George (S. E. Jelliffe); Silver Bay & Sabbathday Point, Lake George (Kemp); Assembly Point (Hulst); "The dwarf form of var. *obliquum* with the sterile frond about one inch broad and long and the whole plant three or four inches high was found at South Corinth." (Peck) in N. Y. State Mus. Report **32**: 54. 1879; Shushan (Frank Dobbin), also in the bog north of Clarks Pond; Warrensburg; W. Fort Ann; Vaughns; northwest Hartford; and elsewhere. The dwarf form has been found in mossy woods west of Pattens Mills church and in other low woods.

An extremely variable species as to size, and the shape and cutting of the evergreen sterile frond.

*BOTRYCHIUM DISSECTUM* Spreng.

Dry pastures and open woods; scarce.

Vaughns; west of Kingsbury; southern W. Fort Ann; east of Fort Ann.

Usually associated with *B. obliquum* and intermediate forms are found approaching that species. The sterile frond is laciniate or finely dissected and varies in texture, the more typical plants being quite thin.

*BOTRYCHIUM MATRICARIAE* (Schrank) Spreng.

"South Corinth. August." (Peck) in N. Y. State Mus. Bull. 67: 21. 1903; Vaughns, rare.

*BOTRYCHIUM SILAIFOLIUM* Presl

Assembly Point (Hulst); Vaughns, Sept. 30, 1903, det. B. D. Gilbert. This fern, formerly known as *B. ternatum*, var. *intermedium*, grows with *B. obliquum*: and matures its fruit two or three weeks earlier than that species.

The large form of *B. silaifolium*, known as *B. obliquum Habererii* Gilbert, was collected in open woods at Vaughns, Sept. 30, 1903. These specimens were referred to this variety by B. D. Gilbert, who said, this was the form Prof. Eaton years ago referred to Robert Brown's *B. australe*. This large form has also been found at Silver Bay (Kemp); northwest Hartford; north of Hudson Falls; and near Fort Edward reservoir.

*BOTRYCHIUM VIRGINIANUM* (L.) Sw.

Moist rich woods; not uncommon. June-Aug.

A plant, at Vaughns, was collected June 17, 1904, which was 31 inches high; with the fertile part 8 inches long and the sterile segment 16 by 9 inches. The young plant begins to unroll about the middle of May.

Variable as to the size of the plants; the smaller ones approaching *B. gracile* Pursh. This fern, John Robinson tells us, "never spreads except by spores, hence is not found abundant in one locality."

HUDSON FALLS, N. Y.

(To be continued)

## Notes and News

### NOTES ON FERN LITERATURE

MAXON, WM. R. Contrib. U. S. Nat. Herb. **17**: I-VIII & 541-608. pl. 32-43. 23 May 1916.

In the sixth installment of his Studies of tropical American Ferns cited above, Maxon deals mainly with three groups of *Polypodium*, respectively the groups of *P. trichomanoides*, *P. furfuraceum*, and *P. squamatum*, comprising sixty-four species accepted as valid and more than twenty-five additional forms. In addition the identity of several species of *Notholaena* is also dealt with. Most of the species of *Polypodium* are small forms of the West Indies, Central and South America. The paper includes sixteen new species of *Polypodium*, and two new species in *Notholaena*.

Of particular interest are the characters used in separating the different species, and the conclusions expressed or understood, which may be drawn from the results.

Characters of the scales of the rootstocks and leaves are given more weight than characters of venation, i. e., the actual structure of the individual scale as seen through a microscope. The presence of a large number of scales, as compared with the almost complete absence of scales, is not counted as significant, provided the scales in both cases show similar cell structure. It is found, however, that two forms which in general ap-

pearance are almost exactly alike may be easily separated by a study of the scale characters.

It has been common practice to use as characters of generic rank definite variations in the venation of which *Polypodium* contains a large number. *Polypodium* has been separated into a number of genera on this very basis but Maxon reports that at least one of these kinds of variation may take place even within a single species. This is *Polypodium polypodioides*, the common gray polypody of the southern states which is also common farther south. According to Maxon, it is impossible to draw any other line of distinction between leaves of this plant with free veins and others with the characteristic areolation or net-veining of section or genus, *Goniophlebium*.

*Polypodium*, in the broad sense, has upwards of one thousand species, the proper separation of which into genera or subgenera is yet to be devised.

R. C. B.

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Wanted for study: plants or leaves showing variation in the amount of division.

In connection with the study of *Nephrolepis* variations, I am anxious to obtain leaves illustrating similar or different types of variations among wild ferns. I should be glad to receive for the Fern Society Garden at the Brooklyn Botanic Garden plants of the Christmas fern with deeply incised or twice-divided leaves, as well as similar leaves of other species.

R. C. B.

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A POOR PLACE FOR FERN LOVERS.—W. W. Rowlee, reporting on a collection of plants from southern Patagonia,\* records only four ferns and one lycopod as col-

\* Bull Torrey Bot. Club 44: 305-322. June 1916.